

Title (en)

Manufacturing method of an opto-electric semiconductor device.

Title (de)

Verfahren zur Herstellung opto-elektrischer Halbleiterbauelemente.

Title (fr)

Procédé pour la fabrication d'un dispositif optoélectrique à semi-conducteur.

Publication

**EP 0663699 A3 19950927 (EN)**

Application

**EP 94120146 A 19941219**

Priority

JP 31953893 A 19931220

Abstract (en)

[origin: EP0663699A2] To selectively grow a P type silicon layer and a Si/GexSi1-x superlattice layer (7) under low temperature conditions in the area encircled with a groove (4), at least the side walls of which consist of silicon oxide film, which is formed in the silicon substrate. Thereby, the leak at the side of the superlattice layer can be reduced. Furthermore, by burying a metal film in the groove, the loss of light at the side of the superlattice layer (7) can be suppressed to the minimum. Thus a light receiver having silicon/germanium.silicon-mixed-crystal layer is stably formed in a silicon semiconductor substrate and optical absorption efficiency can be improved. <IMAGE>

IPC 1-7

**H01L 31/0352**; **H01L 27/144**; **H01L 31/0216**

IPC 8 full level

**H01L 27/144** (2006.01); **H01L 31/0232** (2014.01); **H01L 31/0352** (2006.01)

CPC (source: EP KR US)

**B82Y 20/00** (2013.01 - EP US); **H01L 27/14** (2013.01 - KR); **H01L 27/144** (2013.01 - EP US); **H01L 31/00** (2013.01 - KR); **H01L 31/02327** (2013.01 - EP US); **H01L 31/035254** (2013.01 - EP US)

Citation (search report)

- [A] US 4847210 A 19890711 - HWANG BOR-YUAN [US], et al
- [A] WO 8912323 A1 19891214 - UNIV MINNESOTA [US]
- [PA] PATENT ABSTRACTS OF JAPAN vol. 18, no. 340 (E - 1569) 27 June 1994 (1994-06-27)
- [A] PATENT ABSTRACTS OF JAPAN vol. 17, no. 241 (E - 1364) 14 February 1993 (1993-02-14)

Cited by

EP0709901A1; US5818322A

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 0663699 A2 19950719**; **EP 0663699 A3 19950927**; **EP 0663699 B1 19980422**; DE 69409780 D1 19980528; DE 69409780 T2 19981112; KR 0175173 B1 19990201; KR 950021804 A 19950726; US 5576221 A 19961119

DOCDB simple family (application)

**EP 94120146 A 19941219**; DE 69409780 T 19941219; KR 19940035229 A 19941220; US 35845594 A 19941219